Ministry of Transport and Communications

Towards a barrier-free information society

Action Programme 2011–2015

Programmes and strategies 3/2011

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ISSN 1795-4037 (web)
ISBN 978-952-243-231-5 (web)

Cover design
Mainostoimisto Proinno Design Oy

Layout
Workshop Pälviä Oy

Photographs
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(Näkövammaisten Keskusliitto ry), Istockphoto, Pixmac

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Foreword

In recent years, our society has become increasingly digital, and a considerable share of information and information society services now rely on electronic channels. The Ministry of Transport and Communications supports the development of digitalisation, because it improves the availability of services; it promotes activities that are in line with sustainable development; it creates new opportunities for communication, use of services and commerce; and above all, it improves the citizens' opportunities for equal participation.

However, this development carries a risk of the inequality and exclusion of citizens, in case the digitalisation of services and information flows is implemented in a technology driven manner, without understanding the needs of the citizens or taking their skills into consideration. Ensuring accessibility plays a significant role in enhancing democracy.

In the near future, Finland will have the opportunity of showing the way as an innovative nation of barrier-free information society solutions. We have strong expertise in ICT use, we have conceptions and visions of future trends, and we have an excellent sector of NGOs and voluntary organisations.

In order to turn the idea of a barrier-free information society into reality, all actors in society must recognise their own share of responsibility. Building a barrier-free information society is not the responsibility of any single party, and the government, private sector and NGOs must thus all focus on implementing the Action Programme and building up their cooperation.

The primary target group of the Action Programme includes government actors, product developers, service providers, R&D centres and different kinds of organisations. In addition, the programme can be used as a guideline for any other information society actor.

The accessibility issues of the information society cannot be resolved overnight or with a single Action Programme. However, the programme represents a step forward in implementing a barrier-free information society, and it will play a major role in developing the Finnish information society and communications policy over the next five years. Drafting concrete policy measures and their step-by-step implementation needs to begin in 2011. The true value and impacts of the Action Programme will be reflected in the level of accessibility of information society after 2015.

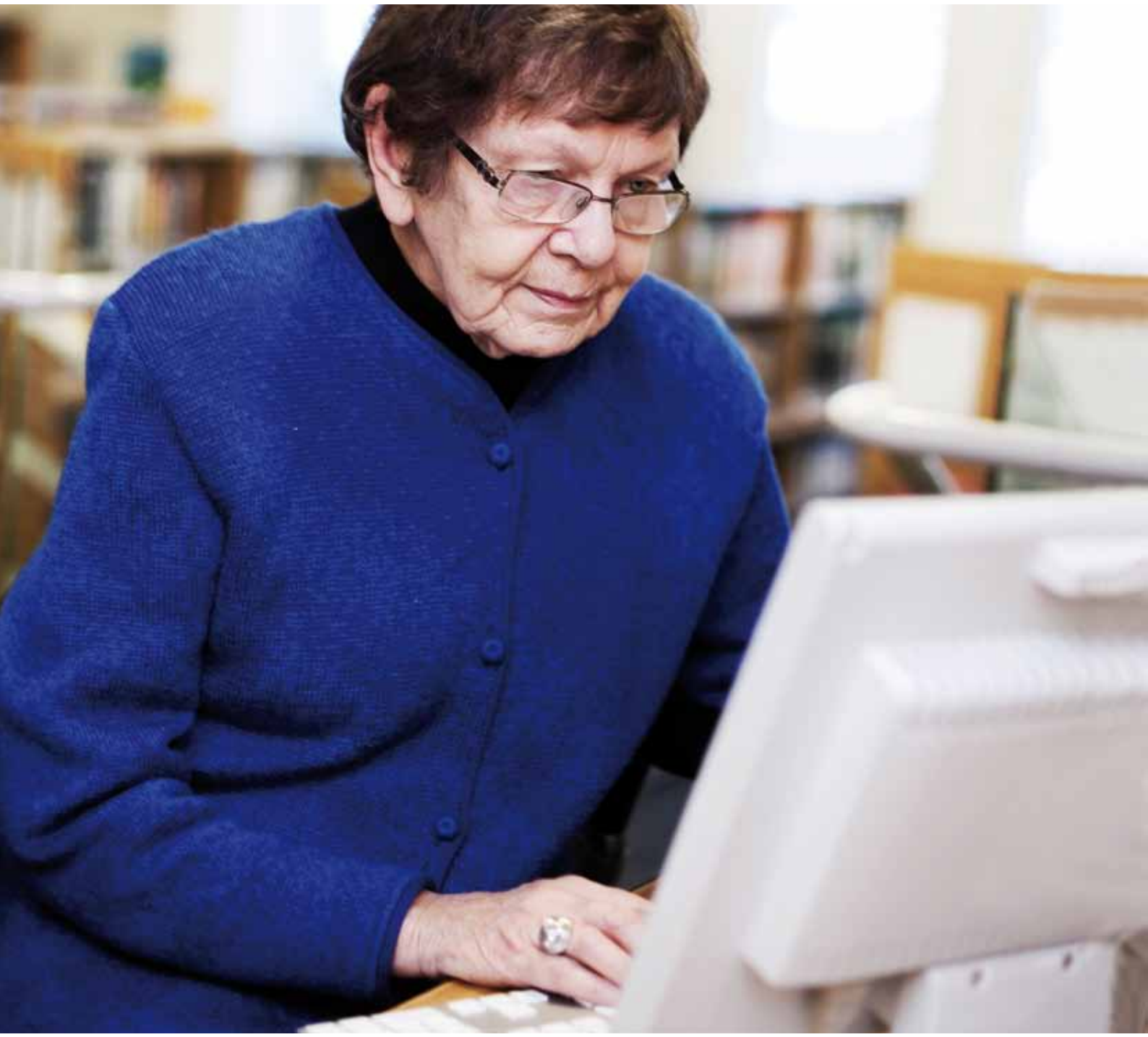
Helsinki, 16 December 2010

Suvi Lindén, Minister of Communications

Summary

This Action Programme sets out to identify shortcomings that form a barrier to citizens' fair and equal participation in the information society.

The programme strives to reduce such barriers by proposing policy measures for the next few years.



The aim of the Action Programme is to improve accessibility of the information society for all citizens. Implementing services that are accessible from the start will cut down on the need for later fixes and thus costs. Taking the accessibility perspective into account often improves accessibility for all user groups.

The programme proposes measures for the following five years. These aim at:

- clarifying coordination in the development of information society accessibility,
- improving information society capabilities of the citizens and government services,
- developing increasingly multi-channel communications and services,
- improving the usability of hardware, software and auxiliary devices,
- improving the accessibility and comprehensibility of online content,
- supporting research and development in the field of barrier-free information society, and
- improving accessibility in public procurements.

It is proposed that a working group under the Ministry of Transport and Communications be appointed to monitor the Action Programme, consisting of central actors and promoters of accessibility and the information society. Various organisations whose know-how cannot be rivalled by the government or the private sector will play a significant role in this. The tasks of this working group will include the annual targeting and concretisation of measures to be implemented, prioritisation of measures, complementing the Action Programme and reporting on implementation of measures to the Ministry of Transport and Communications.

This Action Programme was drawn up in cooperation with users of media contents and other electronic services of the information society, as well as actors in the field. Different kinds of organisations and voluntary actors were involved in the drafting of the programme. Six workshops preparing the ground for the programme were organised in 2010 with a total of some 60 participants. For more information on the Action Programme, the working group and implementation of measures, visit the website of the Ministry of Transport and Communications at **www.lvm.fi/viestintapalvelujen_esteettomyys** and government project register at **www.hare.vn.fi** (in Finnish).

Central terminology

When talking about accessibility or availability, we often mean different concepts depending on the available background information, context or perspective. Accessibility and availability are often associated with the term usability. These terms are quite frequently used in parallel, and they complement each other.

They are also used together in this Action Programme. In addition, two other central terms are significant for this programme; *Design for All* and ease of use. To make the Action Programme easier to understand, the terms are explained below, even if these definitions are not exclusive. |Reference 1|

Reference 1 Sources used include Haglund:
Tietotekniikan hyödyntämisen esteettömyys (2009).
www.wikipedia.org and www.adage.fi/blogi/2002/kaytettavyyssanasto.

Accessibility means that everyone can use a product or a service regardless of their age, disability or other limitation. An accessible product or service adapts to the customer's individual needs. The aim of accessibility is to enable and facilitate the equality of people in their everyday lives, ensuring that all citizens can work, study, pursue hobbies and participate.

Availability describes considering the needs of various target groups and the approachability of a product or service. Availability promotes equality. Availability means that the target is easy to approach for all types of people, not only from the perspective of persons with disabilities or functional limitations.

Usability describes the user-friendliness of an auxiliary device or another manufactured object, service or environment in achieving a certain goal. Usability can also refer to methods for measuring ease-of-use and a set of principles that can be applied to make a product, a service or an environment easier to use.

Ease-of-use refers to a design principle based on which users can efficiently achieve their goals regardless of their skill levels. Usability does not mean reducing functional options so that an easy-to-use end result has fewer functions.

Design for All is a concept intended to guide designers and decision-makers in implementing solutions that meet customer needs, taking into consideration the user, context of use and the situation. A key role is played by so-called mainstream thinking, where meeting the needs and possibilities of an extended body of customers and users should be set as a goal from the start when designing solutions.

Information society development

In recent years, society has been developing at an immense speed. Two important factors contributing to this are technological advancement and fast information flow.

Technological development has already generated significant benefits for society and the economy.

Information and communication technologies are now present in almost all areas of life; they play a major role in our every-day lives, at home, at work and in education. The increasingly free and rapid mobility of information as well as goods, capitals and services across geographical borders is a significant characteristic of the global information society. We use information technology to shop, take care of every-day business, keep in touch with friends, entertain ourselves and find information. The list of possibilities is endless.

ICT applications can for example be used for monitoring a person's state of health, for commerce and for creating new forms of social communication. At its best, technological development starts from the needs of people and is more user-oriented than before. New types of applications flexibly adapt to user needs, and human-computer interaction is active and creative. Technology in itself is not the reason for the existence of the product or service, but the benefits and added value derived from it.

ICT also makes it possible to better meet the needs of ageing people and people with disabilities. New electronic services and other IT solutions, including video calls, remote interpretation, interactive television, motion, temperature and monitoring sensors and various alarm systems are gradually enabling older people to stay in their own homes for longer and helping to improve general wellbeing. In the future, we can make better use of flexible service and product models adjusted to human needs, provided that they can be introduced in wide-spread use.

The development of ICT has also improved communication and participation by opening up new channels of exerting influence and creating new operating environments. The world is networking more than ever. We can talk to persons living on the other side of the globe without any trouble and without having to travel, we can share information, images and mobile data over fast network connections, we can compare prices and buy products outside our national borders using on-line order forms and a credit card. Should we wish, we can even shape an operating environment of a totally new type in one of the many virtual worlds.

However, we are at the same time talking about a digital divide, which describes the different capabilities of people and nations to use the evolving ICT technology. At the end of the first six-month period in 2010, there were a total of some 2.7 million broadband subscriptions in Finland. This represents a growth of some 9% compared to figures at the beginning of the year |Reference 2|.

Reference 2 The Finnish Communications Regulatory Authority: *Market review 3/2010 – Six-monthly review 2010*.

Finland strongly supports the spread of fast broadband networks, and the national objective is that by the end of 2015, nearly all permanent residences and permanent premises of companies and public administration organisations will be within a distance of no more than two kilometres from an optical fibre or cable connection working at a speed of 100 Mbit/s.

The mobile telephone penetration exceeded the number of inhabitants in 2006, and at the end of June 2010, there were over eight million mobile telephone subscriptions in Finland, 78% of which were used by households |Reference 3|. Regardless of this, all citizens still do not have fully equal possibilities of using ICT. Background factors may include age, gender, disability, education, financial circumstances and skills.

It is part of information society development that an increasing number of services are moving to the Internet. In general, this trend can be considered a positive one, as it increases the offer of services. The new electronic services may be highly useful for example for people with physical disabilities who thus have easier access to all services they need regardless of their place of residence. Online services may be valuable for people whose working times prevent them from visiting a bank during the opening hours. They may also be useful for a student who, after a skiing accident, has to miss lectures for several weeks. Similarly, electronic services may be helpful and useful for senior citizens and immigrants.

The digitalisation of services also has its down side, in case the move to online services is technology driven and implemented without listening to the customers. Using an electronic service environment is simply not an option for everyone, and for some citizens, the most user-friendly and accessible form may for example be printed communication and its physical distribution, also in the future.

Citizens must be able to rely on their possibilities of receiving personal service that is equal to the one offered online, and it must be available without additional costs. On the other hand, any cost pressures that might arise from this trend must not have as a consequence a reduction in the number of service providers and versatility of services produced by content providers. Society must assume responsibility for ensuring a balanced development of conventional and online service environments. ●

Reference 3 The Finnish Communications Regulatory Authority: *Market review 3/2010 – Six-monthly review 2010*.

Main strategies, programmes and agreements

The equality of all citizens and their right of participation in the information society is enshrined in international agreements, European Union initiatives, and national strategies and programmes alike, a few summary examples of which are discussed below.

The EU's Digital Agenda

According to the European Commission, the use of ICT has over the last 15 years been the underlying factor in one half of productivity growth in Europe, and this development is not showing any signs of slowing down. The Commission thus published a Digital Agenda in May 2010 |Reference 4| which aims at supporting European economic growth and spreading the benefits of the digital era to all sectors in society.

The Digital Agenda outlines seven priority areas for action. These include faster Internet access, enhancing digital inclusion and applying ICT to address challenges facing society, such as the ageing population.

The Digital Agenda is the first one of seven flagship initiatives of the *Europe 2020 Strategy* aiming at smart, sustainable and inclusive growth.

> According to the Agenda, everyone, young and old, irrespective of social background, is entitled to the knowledge and skills they need to be part of the digital era since commerce, public, social and health services, learning and political life is increasingly moving online.

National Digital Agenda

The new National Digital Agenda that was completed in December 2010 will guide the development of the Finnish information society during the next Government term. Its impacts will cover the years 2011–2020. The Digital Agenda will create an extensive framework for the efficient utilisation of digital services. One essential goal of the Agenda is to promote everyone's possibilities and skills of using digital services.

The Digital Agenda lists measures for safeguarding, in particular, the position of ageing people as active citizens, for example by offering support and advisory services. The agenda also highlights the significance of accessibility, availability and ease-of-use of online services, and calls for the accessibility and usability perspectives to be included in all legislation on the information society.

Reference 4 COM(2010)245 final.

eServices and eDemocracy Acceleration Programme (SADe)

In April 2009, the Ministry of Finance adopted an *eServices and eDemocracy Acceleration Programme* (*SADe*). The purpose of this programme is to promote e-government in order to ensure that by 2013, e-services for citizens and businesses cover all main services. Uniform customer interfaces will be created for citizens and businesses to allow access to public services provided by various actors. Another aim is to develop the interoperability of all public administration information systems. This programme will conclude in February 2014.

UN Convention on the Rights of Persons with Disabilities

On 13 December 2006, a Convention on the Rights of Persons with Disabilities was adopted by the UN. The aim of this Convention is to promote, protect and ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities, and to promote respect for their inherent dignity.

The principles of this Convention include non-discrimination of persons, full and effective participation and inclusion in society, and accessibility. Finland has signed the Convention and its Optional Protocol, but its ratification is still pending.

Finland's Disability Policy Programme 2010–2015

Finland's Disability Policy Programme was adopted in August 2010. The aim of this programme is to secure a fair position in society for people with disabilities, also in practice. The Programme outlines the goals of disability policy for the years 2010–2015 and beyond. This programme creates a strong foundation for implementing social inclusion and equality of persons with disabilities in Finland.

The programme supports the implementation of disability policy in all sectors of social policy. It is about mainstreaming disability policy as well as clarifying and reinforcing sectoral responsibility in it. The aim is to increase the visibility of disability policy, which until now has been marginalised, in various branches of administration.

The programme sets out to recognise barriers to social inclusion of persons with disabilities and proposes measures for their removal. The Disability Policy Programme also contains measures promoting accessibility of the information society.

Central legislation

An increasing number of Acts are based on directives adopted in the European Union that must be implemented in the national legislation. Legislation also plays a key role in the information society development. Below is a summary of Acts considered essential in the respect that they guide and foster equality in the information society in one way or the other. This Action Programme does not take a position on any need to amend the legislation.

The Constitution of Finland (731/1999)

The Constitution of Finland lays down everyone's basic rights. According to section 6 of the Constitution, no one shall, without an acceptable reason, be treated differently from other persons on grounds such as age, sex, disability or other reason that concerns their person. The Constitution of Finland also lays down provisions on everyone's right to freedom of speech (section 13). Rights promoting communication also include section 17 of the Constitution which states that the rights of persons using sign language and of persons in need of interpretation or translation aid owing to disability are guaranteed by an Act.

Communications Market Act (393/2003)

Reform of the Communications Market Act is in process at the time of drafting this Action Programme. With the reform, the universal service obligation concerning communications services, as provided in the Act, would cover the rights of persons with disabilities more clearly than at present. In the future, responsibility for attending to the special needs of users with disabilities would rest with telecom operators subject to the universal service obligation. Upon entry into force of the amendment, users with disabilities must be provided with basic communications services equivalent to those enjoyed by other users.

According to the Act, the subscriber connection to be provided should allow all users, including those with disabilities, to use emergency services, make and receive national and international calls and use other ordinary telephone services. The subscriber connection would also be required to allow an appropriate Internet connection for all users, taking into account prevailing rates available to the majority of users, technological feasibility and costs. A telecommunications operator could also provide the services mentioned above through several subscriber connections if this does not cause unreasonable additional costs to the user.

Terminal devices, programmes and additional services, such as interpreting, are not included in the telecom operators' network and communications services regulated by the Communications Market Act.

By reforming the Communications Market Act, amendments made to the EU electronic communications directives are implemented. These amendments were adopted by Directives 2009/140/EC and 2009/136/EC that entered into force in December 2009.

Act on Television and Radio Operations (744/1998)

The Act on Television and Radio Operations was reformed in August 2010. The reformed Act lays down provisions on making programmes accessible for people with visual or hearing impairments. According to section 19 of the Act, Finnish and Swedish-language television programmes must be accompanied with subtitling and other programmes with audio description or a service that converts the subtitles into speech (audio description and subtitling service).

Public service programmes as referred to in the Act on Yleisradio Oy must be accompanied with the audio description and subtitling service. In addition, the service needs to be available for programmes broadcast under a national programme licence that are in the public interest pursuant to further provisions laid down by Government decree. In this regard, the legislative amendment is to enter into force in July 2011. The decree is expected to be issued in spring 2011. The amendment implements EU Directive 2007/65/EC on broadcasting services, which entered into force in December 2007.

Act on Yleisradio Oy (Finnish Broadcasting Company) (1380/1993)

According to the Act, the Finnish Broadcasting Company is responsible for the provision of comprehensive television and radio programming with the related additional and extra services for all citizens under equal conditions. The public service programming must, among other things, support democracy and everyone's opportunity to participate by providing a wide variety of information, opinions and debates as well as opportunities to interact;

treat in its broadcasting Finnish-speaking and Swedish-speaking citizens on equal grounds and produce services in the Sami, Romany, and sign languages as well as, where applicable, in the languages of other language groups in the country; support tolerance and multiculturalism and provide programming for minority and special groups.

Act on Radio Frequencies and Telecommunications Equipment (1015/2001)

The purpose of the Act is to promote efficient, appropriate and sufficiently interference-free use of radio frequencies; to safeguard the fair availability of radio frequencies; to create conditions for maximising the unrestricted mobility of telecommunications equipment; and to promote the efficiency of the communications market within public telecommunications.

Pursuant to the Act, the Finnish Communications Regulatory Authority issues regulations on the use of radio frequencies for different purposes, with due consideration to the international regulations and recommendations on radio frequency usage. Hearing aid devices operating in the 169.4000–169.5875 MHz frequency range harmonised throughout the EU are licence-exempt in Finland by Regulation 15 of the Finnish Communications Regulatory Authority.

Act on Electronic Services and Communication in the Public Sector (13/2003)

The purpose of the Act is to improve smoothness and rapidity of services and communications as well as information security in the administration, in the courts and other judicial organs and in the enforcement authorities by promoting the use of electronic data transmission.

The Act contains provisions on the rights, duties and responsibilities of the authorities and their customers in the context of electronic services and communication. An authority in possession of the requisite technical, financial and other resources must, within the bounds of these, offer to the public the option to send a message to a designated electronic address or other designated device in order to lodge a matter or to have it considered.

Administrative Procedure Act (434/2003)

The purpose of the Act is to achieve and promote good administration and access to justice in administrative matters. Is it further the purpose of the Act to promote the quality and productivity of administrative services. Authorities must treat the customers of the administration on an equal basis and exercise their competence only for purposes that are acceptable under the law.

The acts of the authorities must be impartial and proportionate to their objective. They must protect legitimate expectations as based on the legal system. Authorities must provide to its customers the necessary advice, within their competence, for taking care of administrative matters; as well as respond to the questions and queries on their service. Advice is provided free of charge.

Act on Public Contracts (348/2007)

The purpose of the Act is to increase the efficiency of the use of public funds, promote high-quality procurement and safeguard equal opportunities for companies and other communities in offering supply, service and public works contracts under competitive bidding for public procurement. State and municipal authorities and other contracting authorities must put their contracts out to tender as provided in this Act.

The Act on Public Contracts was reformed in summer 2010. The new Act clarifies opportunities for integrating social considerations in public procurement. Social considerations in public procurement refer to measures to safeguard basic rights, equal treatment and compliance with the non-discrimination principle. Social considerations also include measures to protect those most vulnerable, and positive discrimination and other positive action to prevent social exclusion.

Act on Services and Assistance for the Disabled (380/1987)

The aim of the Act is to promote the prerequisites of persons with disabilities to live and to interact with others as an equal member of society, and to prevent and remove obstacles and disadvantages caused by disability. The Act helps find individual solutions required by persons with disabilities and supports their equality. Services and supportive measures in accordance with the Act are organised if a person with disabilities does not under another Act receive sufficient services and supportive measures meeting his/her needs.

Non-Discrimination Act (21/2004)

The Non-Discrimination Act prohibits discrimination on the basis of age, ethnic or national origin, nationality, language, religion, belief, opinion, health, disability, sexual orientation or other personal characteristics (section 6). In July 2008, the EU Commission issued a proposal for a non-discrimination directive whose purpose is to promote equality in the European Union by complementing the current anti-discrimination framework. Discussion on the proposal is still in process at the time of drafting this Action Programme.

Act on Interpreter Services for Persons with Disabilitie (133/2010)

The purpose of the Act is to promote the opportunities of persons with disabilities to act as equal members of society. The Act lays down provisions on the right of persons with disabilities living in Finland to interpretation services organised by *Kela*, the *Social Insurance Institution of Finland*. Those entitled to the service include persons with hearing and visual impairments, hearing impairments or speech impairments who, because of their disability, need interpreting services for work, study, the use of services, societal participation, hobbies or leisure. A further requirement is that the person in question is able to express his/her own will with the help of interpretation and has a functioning method of communication at his/her disposal. Interpreter services pursuant to the Act are organised if a person with disabilities does not under another Act receive sufficient interpreting services that meet his/her needs.

Central public administration measures

In addition to various strategies, programmes, agreements and binding legislation, other important measures exist that are currently striving to improve the accessibility of the increasingly digital information society. This section discusses a few actions launched by the public administration that contribute to supporting the policies of the Action Programme.

Quality to the Web

In 2007, the Ministry of Finance published a set of quality criteria intended as a tool for developing and assessing public online services. The project includes 41 quality criteria in five areas of assessment: use, content, management, production and benefits of online services. This set of criteria was developed in a cooperation project set up by the Ministry of Finance.

The quality criteria for online services are intended for all those who work with the production of public online services. They can be used as a manual for implementing secure and easy-to-use services that are accessible to all. The set of criteria contains guidelines for efficient and appropriate arrangement and management of online service production.

Public administration recommendations *(JHS)*

Recommendations based on the *JHS* system apply to information management in central and local government. A *JHS* recommendation may consist of a harmonised procedure, definition or instruction intended for use in public administration.

The aim of the *JHS* system is to improve the interoperability of information systems and the data contained in them, to create preconditions for developing functions regardless of administrative and sectoral boundaries and to make the utilisation of existing information more efficient.

The recommendations also strive to minimise overlapping development efforts, guide information system development and achieve good and consistent practices for public administration and, in particular, for information management of public organisations. The recommendations are adopted by the *Advisory Committee on Information*

Management in Public Administration JUHTA, and a *JHS* division working under *JUHTA* guides their preparation. The recommendations can also be attached to invitations to tender or requirement specifications, and they ensure that essential accessibility and usability issues are taken into consideration in procurement and project contracts.

Recommendations that are essential in terms of the design of online services and public document management include *JHS 129* and *JHS 143*.

Citizen's account

The citizen's account is an interactive electronic communication channel between the authorities and citizens. It provides a single, uniform customer interface between the public administration and citizens. An implementation project completed under the guidance of the Ministry of Finance took place in 2010, and the first services that can be used through the citizen's account will be available in 2011. The State Treasury will be responsible for the procurement and administration of the citizen's account service.

A citizen's account makes it possible that electronic services of the entire public administration can be provided to citizens on a single website. Following the practices of social media, the citizen's account can be linked to various public administration services to ensure that citizens can find the account exactly where they would normally conduct their business on the Internet.

Identification for the service is based on the customers' personal online banking identifiers or an electronic identity card, and at a later date once the associated solutions are available, mobile identifiers can be used. The services of all public administration actors, state administration, municipalities and *Kela*, the *Social Insurance Institution of Finland* can be linked to the citizen's account.

Challenges

The use of information society services is associated with a wide range of different needs. There are great variations in the uptake of telecommunications services between different age groups.

Diverse needs

According to the *Finnish Communications Regulatory Authority*, 90% of households with persons under 44 years had access to the Internet in 2009, while the same rate for those aged over 65 was as low as 24%. Ownership of a mobile phone, on the other hand, is not age dependent: of those aged less than 65, more than 99% own a mobile phone, and even for those aged over 65, this share is more than 95%. |Reference 5|

The development of the information society must start from the equality of all citizens as users of ICT and electronic services. Everyone must have equal opportunities of living and being active in the information society. Discrimination cannot be tolerated on any grounds in the information society, either, and measures must be taken to identify and safeguard the rights of each citizen to equal participation in sharing information produced by society and to using services regardless of their skills, functional limitations, age or place or residence.

The Finnish Constitution guarantees everyone the right to express, disseminate and receive information, opinions and other communications without prior prevention by anyone. In modern society, many vital pieces of information travel along electronic channels.

Obtaining information is to a great extent dependent on each individual's ability to acquire this information and the equipment at their disposal. It also depends on the accessibility of information and the comprehensibility of the actual content and linguistic expression. The comprehensibility of the content is further associated with the linguistic expression.

When developing the information society, it is necessary to stress the perspective of wellbeing, which includes not only equal participation but social and geographical equality. In practice, however, this objective is not achieved for all citizens. Barriers arising from attitudes in society, availability of ICT equipment, complexity of electronic products and services along with the lack of auxiliary devices and instruction in their use restrict people's ability to cope independently, their self-determination and their social inclusion in many ways.

Reference 5 The Finnish Communications Regulatory Authority:
Market review 3/2010 – Bi-annual review 2010.

Ageing of the population for its part represents a challenge to information society development. At the end of 2009, the number of those aged over 65 was 910,441. It was estimated in 2010 that persons aged over 65 represented 18% of the Finnish population.

In 2020, this share will be 23%, and in 2030 as much as 26%. In 2025, the number of persons aged between 65 and 79 in Finland will be one million, or 50% more than today, and in 2040, there will be half a million people aged over 80, or three times the current number. |Reference 6|

Many senior citizens find using ICT difficult, or they do not feel it is relevant to them. The reason for this may be their lack of capabilities in using ICT, or the difficulty of purchasing equipment. For many aged citizens, lack of motivation for using the information society's online services seems to be the most important reason for failing to use them. In addition to ageing, other reasons for not using information society services may include a person's place of residence, financial circumstances or disability.

According to the European Commission, almost a third of European citizens – around 150 million people – are not actively using the services offered by the information society. Less than 15% of people aged over 65 and only one in three of the unemployed regularly use the Internet. About 74 million Europeans with low levels of education and a third of people in rural and remote areas remain unconnected.|Reference 7|

According to Statistics Finland, 57% of those aged over 65, 21% of the unemployed and 34% of those with a basic level education or lower do not use the Internet |Reference 8|. Statistics indicate, however, that Internet use is currently increasing rapidly precisely in the older age groups |Reference 9|.

We must also take into consideration the fact that after a few decades, the ageing will have grown accustomed to using the Internet while in working life, quite unlike the older people of today. Regardless of this, there currently remains a large number of people in Finland who are being left out of the information society development.

Reference 6 Statistics Finland.

Reference 7 European Commission: *ICT for all – Technology supporting an inclusive world.*

Reference 8 The percentage figures describing the unemployed and those with a low level of education are from 2009.

Reference 9 Statistics Finland: Study on ICT use 2010.

One reason for this is that the needs of different people are not heard adequately. Technology and devices are being developed and new services offered, but not all manufacturers or producers are able to take the needs of different people into account to a sufficient degree. Technology is often developed from the perspective of young people, without being aware of the needs of such groups as ageing people or persons with disabilities.

In terms of customer needs, the content of services is a central aspect. This is why it should be possible to select a technology that optimally supports the relevant content service. Having to fit the contents to predetermined technical solutions undermines both accessibility and general usability.

A precondition for customer-oriented design and implementation of products and services is involving users in the actual design phase and, later on, in testing. As regards senior citizens, for example, this means also those aged 75 and over. As for people with disabilities, it is not enough to hear a single group alone, as the needs of various groups differ from each other.

We have a high level of ICT skills in Finland, but scope for improvement remains in customer-orientedness. For a company, the ability to take the customer perspective into account in the design and implementation of products and services throughout the process could even become a sales argument.

By improving customer-oriented design, even large numbers of new users could be reached. In addition, the social status and financial circumstances of citizens should be taken into account, as these may have a significant impact on the uptake of ICT and online services. A low income level can as such be a significant barrier to equal access to information society services.

The shared goal should be ensuring that the use of devices and services vital for the citizens should not become an unreasonable burden. The use of ICT and electronic services should be scaled to reasonable needs, reliable and sufficiently inexpensive.

Various incentives, for example the domestic help credit in taxation, could contribute to the wider uptake of ICT. From the beginning of tax year 2009, work entitling a taxpayer to the domestic help credit has included the installation, maintenance, deployment and instruction related to ICT equipment, software, information security and communication technology, such as a broadband connection.

Hardware, software and auxiliary devices

To enable us to play an active role in the information society, we need an increasingly wide range of various devices, software and auxiliary devices around us. Almost every home has a television set, while many have two or more. Nearly 80% of households have an Internet connection, and the mobile phone penetration is some 145%. Homes also feature an increasing amount of remotely controlled service functions based on ICT. It would probably be an impossible task to even estimate the number of remote controls in homes. Many are starting to be familiar with the term 'smart homes', while this word may take on many different meanings.

Outside the home, we more and more often pay for our shopping using a chip card and a payment terminal, the functions of which can be rather different depending on the manufacturer. As mobile telephones evolve, they can be used as part of a person's aid devices both in health care and as a method of payment. The uptake of these services will depend on achieving a working user interface.

The digitalisation of homes and services will not bring added value as such, unless they are implemented in a customer-oriented manner. The greater the number of devices, the more important it is for these to be easy to use and compatible.

A good device is based on the user's every-day requirements. This also applies to other products and services. A device, a programme or an auxiliary device is not an end to itself; its reason for existing is the assistance or benefits it affords to the user. Even if each user has their personal needs and requirements as to the functions of a device, we can say, as a simplification, that one of the most essential requirements is ease of use.

Various standards exist to improve the compatibility of devices. Standardisation refers to drawing up joint operating practices in order to make life easier for the authorities, businesses and consumers. Standardisation increases product compatibility and safety, protects the consumer and the environment and facilitates domestic and international trade.

The 2010–2013 ICT *Standardisation Work Programme* of the European Commission |Reference 10| brings up accessibility as an important area of standardisation linked to mandates *M 376* and *M 420*. Nationally adopted standards are mainly European or international ones. In Finland, standardisation is guided and coordinated by the *Finnish Standards Association*.

Reference 10 http://ec.europa.eu/enterprise/sectors/ict/files/2010–2013_ict_standardisation_wp_en.pdf.

Standardisation may have a significant impact on improving the accessibility of devices, software and auxiliary devices |Reference 11|. In addition to device standardisation, devices, software and auxiliary devices must also be compatible with online and communication services. The best capabilities are obtained by combining compliance with correct standards and *Design for All*. When introducing standards, it should be ensured that they are open for all. According to views of operators in the field, standardisation concerning accessibility at European and international level remains poorly known in Finland.

The World Wide Web Consortium (*W3C*) develops common and compatible Internet protocols and technologies. Adopting recommendations is a central form of the W3C's work. The majority of *W3C* recommendations are technical in their nature; in other words, they guide the implementation or use of a device. One central *W3C* initiative is called the *Web Accessibility Initiative* (*WAI*) which has also included the drafting of *Web Content Accessibility Guidelines*.

The latest version of these recommendations, *WCAG 2.0*, was published in 2008. The purpose of the new standard is to help web designers and developers to create sites that increasingly take into consideration particularly older people and those who have problems in using the electronic information network. An official Finnish translation of the *WCAG 2.0* recommendations will come out at the beginning of 2011.

Reference 11 For more information on standardisation, please visit the website of the *Finnish Standards Association.* An extensive study on the role of standardisation in promoting the accessibility of information technology has been drawn up by Henry Haglund (2009).

Examples of concrete problems

In practice, accessibility of the information society means different things to different people. It is only natural that a product or service must meet different requirements for a hearing impaired person than for example for a blind person or for a person whose level of Finnish is low. A few concrete examples of some of the most essential problems for different groups of people are discussed below. The list is in not all-encompassing nor is it meant to be generalising.

Internet and electronic services

Nowadays it is common for people to learn how to use the Internet at quite a young age, and many adults have learned to use at work devices that they were not previously familiar with. Nevertheless, a large number of people remains who have used information technology little in their lives and who find learning new things difficult, either because of the complexity of the subjects or because they lack the motivation.

For elderly people, simply acquiring a device can turn out to be too difficult if no support is available. Many elderly people do not know what kind of a computer they need, how to go about ordering a suitable connection or how to use the computer after it has been purchased. For a large number of elderly people, the entire process of getting a computer should be as simple as possible and also include all the necessary guidance and support. This also applies to many other customers. In addition, there should be enough facilities for public Internet access to allow those who do not have a computer to use electronic services and have the necessary guidance for it.

With ageing, a person’s senses deteriorate. Movements requiring fine motor skills become more difficult, the need for light increases and the ability to separate colours weakens. Many elderly people face the same challenges as visually impaired people who use the same Internet browsers as the sighted, but need auxiliary devices in browsing contents. These include a screen reader programme, a Braille display and a speech synthesizer.

A screen reader relays the information on the screen to persons with visual impairment with the help of speech and/or Braille. A Braille display is an accessory that is used together with a screen reader and that shows in Braille the same information that the speech synthesizer reads out by command of the screen reader programme.

These auxiliary devices are infrequently taken into consideration when designing websites, although with minimal modifications nearly all online content could be readable with them.

Because the auxiliary devices cannot relay images or other information that is in a purely visual form, online services must include additional text that explains the visual content. Poor design of forms, a document format that does not contain text, as well as poorly designed identification methods, such as fixed or changing passwords, password generators or electronic signatures, might make the service totally inaccessible for a person with visual impairment. Enigmatic links and unnamed *flash buttons* present problems for many users, as does *CAPTCHA*, a popular image-based identification method.

Due to their content, many websites are inaccessible for the speech impaired or those using plain language, even with auxiliary devices. The websites of public administration and key service providers in particular should be written in clear language and short sentences, and, if necessary, include illustration that supports the understanding of the text.

The speech impaired should also be taken into consideration when designing online forms; instead of text fields, they should increasingly contain ready-made alternatives from which a person can tick the correct or most correct answer. Alternatives to online services should be provided, such as the possibility of personal contact in public services.

For some auxiliary device users, the price of the equipment may present a problem. A screen reader programme may easily cost some EUR 2,000, magnifying software some EUR 500 and a Braille display between EUR 5,000 and 6,000 |Reference 12|.

In addition to the actual programmes, training is needed to ensure that the user is able to make the most of the auxiliary devices. Even though it is rather easy for a sighted person to learn how to use a computer with the help of the mouse and icons or other visual elements, people with visual impairments have to first learn how to use the auxiliary devices in order to get to the content of the computer.

Reference 12 Situation in 2010.

The Finnish Federation of the Visually Impaired (*Näkövammaisten keskusliitto ry*) maintains a computer lending service and organises user training. The computer lending is heavily dependent on funding, which has recently been reduced.

For a large number of citizens, it is crucial that the most important documents and texts are written in clear language. Official and legal texts are written by subject matter experts and contain professional terms that may be difficult for the ordinary citizen to understand. For some people clear standard language is also too difficult. They need information written in plain language |Reference 13|.

It is important for society that each citizen is able to receive the information they need in a form they can understand. This also results in financial benefits to society. It is especially important to provide information in plain language in official and crisis communications.

In addition to plain language and multimodality, emphasis should be placed on refining information that is available in different sources into service packages that meet citizens' needs and are easily available and understandable.

Telephone, communications and emergency services

Despite the new possibilities offered by the Internet, a telephone connection is still an important means of communication. There is a growing number of people who only have a mobile phone, and landline telephones are gradually taken out of use.

But while technology changes, it is important to make sure that new technologies do not take away services that are important to some people. One example is preserving various safety services that, for the time being, operate reliably only by landline.

Many people would prefer a mobile phone that has a large enough screen, clear buttons and simple user interfaces. It is important that there are enough alternatives available, so that, with guidance, everyone is able to choose a telephone that suits them best.

Reference 13 Plain language is meant for those who have difficulties in reading, understanding or both. It is language that is modified by its content, vocabulary and structure to make it more readable and understandable than standard language. Plain language is more than just clear standard language. Plain language is of use to a variety of people, such as persons with disabilities, immigrants, the elderly or people with memory disorders or dyslexia.

Not all hearing impaired people are able to use a voice telephone, for instance, in their communications without difficulty. The greatest problem has to do with emergency phone calls, which many hearing-impaired people are not able to make without outside assistance.

Nowadays, text messages provide a good communication method, but the national 112 emergency SMS service is not yet operational. |Reference 14|

The deaf who use sign language need sign-language services and contents, such as remote interpreting, in their communications and use of services. For people using sign language, video calls are also helpful. An easy-to-use video call requires either a fast enough broadband connection or a 3G network. In practice, easy and well-functioning video calls are not currently accessible in all parts of Finland, or at least not usable in as wide an area and in all the same situations as regular phone calls and text messages. The GPS features in many mobile phones have been helpful, especially for many visually impaired people, since positioning is not dependent on the abilities of the user but is based on the phone number.

People with poor hearing usually use a hearing aid. A hearing aid amplifies sounds, and therefore users may have difficulty deciphering speech against a lot of background noise or music, for example. For the hard of hearing, different technical solutions that transfer, amplify and clarify sound in the environment are important. These kinds of solutions include the induction loop and hearing aid devices using radio frequencies (so called FM devices). Hearing aid devices operating in the 169.4000–169.5875 MHz frequency range harmonised throughout the EU are licence-exempt by Regulation 15 of the *Finnish Communications Regulatory Authority*.

The problems faced by the elderly include that their position as a target group is often not taken into consideration in phone marketing, they are sold products that do not meet their needs and they receive insufficient guidance in using devices or services. Basic user training should always be part of the service that was acquired.

Reference 14 In 2009, the *Emergency Response Centre Administration* set a working group to examine the possibilities for launching a national 112 emergency text message service. With this service, an emergency message could be sent to the general emergency number 112. In May 2010, the group handed their report to the *ERC Administration*. The report stated that it would be possible to launch this service in 2012.

Television and different terminal devices

In 2009, the Finnish people spent approximately 176 minutes per day watching television |Reference 15|, and the television has a major role in disseminating information, cultural content and entertainment in Finnish homes.

It is estimated that there are approximately 750,000 people with defective hearing and of these, 30,000 are not able to hear the sound of the television or radio even with auxiliary devices. For these people, the subtitling of television programmes and sign language content are essential services.

In terms of people with visual impairments, it is important to ensure that the television and other terminal devices and automated machines do not rely solely on vision but are also usable with voice feedback and keypads that can be managed by touch. Voice subtitling and audio description help the visually impaired in following television programmes.

The speech-impaired are usually not able to utilise everyday communication services to the fullest. A person with a cerebrovascular disorder may not be able to use a regular keypad or a mouse, which makes for example terminals at libraries inaccessible to them without assistance. Similar problems may occur with cash dispensers and similar.

Promoting accessibility in different administrative sectors

One challenge to promoting accessibility is the fact that accessibility issues of the information society are scattered across different sectors and different actors. The questions pertaining to accessibility vary according to whether they are related to electronic communication services, electronic health care, electronic transactions and commerce or public procurements, transport, the built environment, education and the world of work. The division of issues over several sectors can easily result in a situation in which people do not recognise their own responsibility or are not able to focus or coordinate their actions in a way that would render the best possible outcome. Also, the potential of cooperation is often not fully utilised.

Reference 15 www.finnpanel.fi.

Promoting accessibility is still rather scattered in Finland, and no one assumes a clear responsibility for coordinating the communication and supervision concerning accessibility issues.

For an extended period, actions based on good-will have been relied on in Finland, but this has not improved accessibility to the information society enough. However, corporate social responsibility has lately been increasingly called for in this matter, and the beginning of a new decade can be a good time for an awakening of both the public and the private sector. It is also possible that due to the more active role of the EU, Finland will also have to invest in promoting accessibility in different administrative sectors more than before, by way of more direct control and legislation.

Accessible solutions have often been thought of as an extra cost and an additional burden. Obligatory regulations have also been seen as burdensome procedures that are neither encouraging nor cost-effective. The obligations striving for the promotion of accessibility are deemed to significantly infringe on the freedom of the private sector to conduct business. Perhaps the greatest challenge, therefore, lies in changing people's attitudes and starting to see accessibility as a key to a more equal future. Accessibility should be turned into a positive resource that is worth investing in from the start in different services and operations.

A relatively large share of the population risk falling outside the information society and becoming marginalised if accessibility issues are not taken into consideration in the planning, execution and provision of services and products. This would, in turn, mean the maintenance of parallel forms of service, an increased need for aided services and cost pressure in the public administration – as well as lost profits in the private sector.

Cooperation between the private, public and third sectors will also play quite a significant role in promoting accessibility in the future. The promotion of accessibility is also advancing in many international forums. It is important that Finnish actors have an up-to-date idea of this work and that they also take part in it sufficiently.

Research and development

No systematic research has been conducted in Finland on the development of accessibility to the information society. For an extended period, the problem has been in the lack of coordination and the fact that there have not been proper indicators for measuring accessibility. At EU level, some studies have been conducted on the subject.

In Finland, important objects that should be followed up and developed include international standardisation and recommendations along with technical pilot studies and *Living labs* for new solutions promoting accessibility. Following and participating in international work would give Finnish actors better capabilities to develop the driving forces of the supply and demand of accessibility.

Taking accessibility into consideration could be seen as a part of user-centred innovations for which the development of information and communication technology offers new solutions. Accessibility could also be seen as relating to open access to different data resources. Open interfaces and standards would also contribute to promoting accessibility for all users.

In Finland, research on the accessibility of the information society has to a large extent been scattered between different actors who each have their own tasks and viewpoints. Important researchers and funding providers include the *National Institute for Health and Welfare* (THL), the *Technical Research Centre of Finland* (VTT), the *Finnish Funding Agency for Technology and Innovation* (TEKES), universities, polytechnics and the *Academy of Finland*.

The activities of the National Institute of Health and Welfare include maintaining the national *Design for All Network* that is based on exchange of information. The *Design for All Network* consists of research institutes, schools and organisations. Different organisations have an important role in developing an accessible information society, and their know-how should be utilised more. The actual users in particular have so-called tacit knowledge about issues pertaining to accessibility of products and services. They should therefore be incorporated in research and development projects from the start.

The Human Factors group of the *Finnish Communications Regulatory Authority* also takes part in following and evaluating the needs of special groups in the development and standardisation of the services of communications networks, terminal devices and user interfaces.

Another difficulty in research and development lies in the fact that the results are not applied well enough and that the continuity of R&D projects is not secured due to uncertainty of resources. Clearly appointed coordination responsibility in research and development pertaining to an accessible information society might support national monitoring, applicability of R&D results and continuity of activities. Better coordination might help to focus R&D projects to areas where they are most needed. However, merely increasing coordination might not necessarily be a sufficient solution, since the most important issue is finding a party to assume clear responsibility for the development of the entire field.

The key question in studying the accessibility of the information society is often prioritisation. The only way to ensure the future of research and development projects relating to the accessibility of the information society is to understand the significance of this matter and allocating resources for it. ●

Promotion of a barrier-free information society in 2011–2015

Developing a barrier-free information society is beneficial to all citizens.

Developing a barrier-free information society is beneficial to all citizens. Incentives and guidance are required to enable citizens to act as full members of the information society and to avoid exclusion. This requires public and private sector measures, the inclusion of NGOs and cooperation between different administrative sectors. Central operators include various national ministries and agencies and institutions working under them, the *Finnish Information Society Development Centre* (TIEKE), various research institutes, the *Association of the Finnish Local* and *Regional Authorities* and organisations represented by groups of persons with disabilities and various age groups, the private sector included. When it comes to promoting a barrier-free information society, everyone is responsible.

Measures

The list below outlines policy measures that this Action Programme aims to influence over the next five years. These measures are aimed at coordinating the development of information society accessibility; increasing people's information society skills and capabilities; developing increasingly multi-channel services and technology-neutral communications; improving the usability of hardware, software and auxiliary devices; improving the accessibility and comprehensibility of online content; supporting research and development activities and improving the accessibility in public procurements.

It is proposed that the measures and targets of the Action Programme be defined annually by a working group monitoring the implementation of the programme. These activities would allow the measures to be modified if necessary due to reasons such as technical developments or consumer needs.

Coordination of a barrier-free information society

1. A monitoring group operating under the Ministry of Transport and Communications should be appointed to ensure the implementation of the Action Programme. The monitoring group should consist of key operators in the field of accessibility and issues relating to the information society, including authorities, different organisations, device and software manufacturers along with service providers. The duties of this group should include establishing targets and defining measures to be taken on an annual basis, ranking the measures according to their priority, complementing the Action Programme and reporting on its implementation to the Ministry of Transport and Communications. In addition, the group should bring up accessibility issues and initiate discussion on topical matters.

2. It is necessary to determine whether there is a need for an information and development centre dealing with the accessibility of the information society. This centre would be responsible for providing information on accessibility issues, studying them, monitoring the development of accessibility and providing support.

Development of capabilities

3. The development of people's ability to operate in the information society should be supported by disseminating good operating models.
4. The operating capacities of the *Finnish Design for All* network should be enhanced. The network could be used to improve wide-ranging information on accessibility, availability and usability issues.
5. An accessibility guide and a checklist for accessible services should be drawn up for the public sector.

Development of multi-channel services and technology-neutral communications

6. Availability of information simultaneously through various communication channels should be improved (e.g. travel information using audio and visual devices).
7. Services promoting the accessibility of television contents should be expanded, and information on these services should be spread more efficiently (e.g. subtitling and audio subtitling, descriptive interpretation, sign language contents, plain language).
8. Introduction of the 112 emergency SMS service in 2012 should be ensured in accordance with the final report of the *Emergency Response Centre Administration* working group.
9. Use of sign language contents and plain language should be increased in public administration.
10. Use of solutions to clarify audio material and tactile or light-based solutions should be increased in public facilities.

Hardware, software and auxiliary devices

11. Cooperation between device, software and auxiliary device manufacturers and various user group representatives should be deepened. Operating models based on open innovation, such as *Living Labs*, should be developed.
12. Dissemination and introduction of standards increasing accessibility should be promoted.
13. Companies should be encouraged to provide the necessary support and guidance in conjunction with the procurement of hardware, software and auxiliary devices.

Online contents

14. Public administration websites should be analysed for accessibility. Public mappings should be carried out at regular intervals, and problems should be tackled.

15. Public administration's awareness of ways to promote the accessibility of online contents (standards and recommendations) should be increased.

16. The availability of public administration online contents should be enhanced by committing the public administration to following the *WCAG 2.0* guidelines.

Research and development activities and monitoring

17. User-centred research should be supported to promote the accessibility and availability of the information society. Needs related to the use of IT tools and devices and electronic services should be determined for various user groups.

18. Steps should be taken to engage actively in EU research and development programmes, and funding opportunities opened up by them should be utilised in the development of accessibility (FP7/AAL, ICT PCP, CIP).

19. The development of a barrier-free information society should be monitored using concrete indicators.

Public procurements

20. Public procurement advisory services should be promoted to also include accessibility in the considerations of the procurement procedure.

Appendix 1:
Background information on various groups of people with disabilities

Intellectual disabilities

● Today, intellectual disability is defined as a broad limitation of capabilities. Intellectual disability is a superordinate concept to learning difficulties and problems in maintaining daily activities that manifest themselves in diverse ways and that can be attributed to many different causes.

Intellectual disabilities are generally life-long conditions, which is why the life cycle approach is an essential basis for discussing the associated individual manifestations. The functional capacity and its limitations must also be adapted to the individual's residential and operating environment and the challenges and requirements that they entail. There are 35,000 to 40,000 people with various intellectual disabilities in Finland. The adverse effects and limitations of intellectual disabilities should be examined in relation to the age of a person and the developmental tasks that are normally related to that age group. ●

Visual impairment

● There is no single, unambiguous definition of visual impairment, as people's assessments of their eyesight are subjective. For this reason, there are no exact statistics on the number of visually impaired people in Finland. However, studies suggest that there are some 80,000 visually impaired people in Finland, or 1.55% of the population. It is estimated that up to 70,000 of these people are elderly, and only 10,000 of working age. It is estimated that the number of visually impaired young persons under the age of 18 is between 1,000 and 1,500. It is expected that there will be 1,400,000 65-year-olds in 2020. Ageing of the population will considerably increase the number of visually impaired people in the near future. In ten years, their number may have increased to nearly 200,000.

According to the *Finnish Federation of the Visually Impaired*, the majority of people with visual impairments have low vision, while the number of blind people is less than 10,000. Even among the blind, the majority have some residual vision. Total blindness is rare in Finland.

According to the *Finnish Federation of the Visually Impaired*, less than one hundred children with visual impairments are born in Finland every year. No accurate figures can be given because most children who are born with visual impairments have multiple disabilities and their visual impairment is not always immediately recognised.

Visual impairments in children are often severe and the presence of multiple disabilities makes rehabilitation a particularly difficult challenge. The visual impairment register has 40–60 children in each cohort.

The Federation estimates that each year some 300 to 400 working-age adults develop a visual impairment. Among the elderly, each year several thousand lose their eyesight partially or totally.

The majority of the estimated 80,000 visually impaired people in Finland are elderly. Studies indicate that vision is decreased to the level of a visual impairment in six to eight per cent of persons aged 65 or over. In 2009, there were over 900,000 persons aged 65 or over. In 2020, the number of persons aged 65 is expected to be 1,400,000. The number of visually impaired people will increase significantly in the near future.

When functional vision is decreased to the level of a visual impairment, it is no longer part of the so-called natural ageing process and weakening of bodily functions. Instead, there is always an underlying disorder. In addition to actual visual impairments, the elderly also have plenty of problems related to eyesight. Although their visual acuity may be adequate in good conditions, they have problems with their eyesight, because their spectacles are not strong enough to correct the impaired vision or because the lighting in their home is insufficient.

Today, there are over 100,000 persons with visual impairments or poor vision. In ten years, this number may be nearly 200,000. ●

Hearing impairment

● It is estimated that there are some 750,000 people in Finland with hearing impairments of varying severity. Thirty thousand of them cannot hear the audio material on the television or the radio even with a hearing aid. The number of those who have lost their hearing in adulthood stands at 3,000. Noise has resulted in a hearing impairment in approximately 100,000 people. The number of hearing impaired people is expected to increase to total up to 1,000,000 individuals by 2020 as a result of population ageing. By this time one in five adults will have some degree of hearing impairment.

The deaf represent a linguistic and cultural group who use sign language as their first language for purposes of everyday communication, for accessing information and for studying. Sign language interpretation services allow them to communicate and use services in spoken-language environments.

The deaf use the spoken language of their environment as their second language primarily in the written form. Their spoken language skills range from complete bilingualism to very low levels of reading and writing skills. Lip reading and vocal skills also vary individually. Audio-based communications such as speech, audio signals and sound alarms are not accessible to the deaf.

In all their activities and in all barrier-free solutions in the environment, the deaf rely on their eyesight; in some situations they may also use their sense of touch. The number of deaf people who use sign language in Finland is around 5,000. There are two sign languages, the Finnish Sign Language and the Finland-Swedish Sign Language. The birth rate of deaf children is expected to remain at the current level in the years to come, but there will probably be more groups of the hearing impaired; people using sign language, people using signing communication or support methods, people using signed speech and so on.

People with poor hearing or those who have lost their hearing after learning to speak have learned the spoken language through hearing and often communicate normally through speech. Speech support methods or alternative communication methods used by the deaf and the hard of hearing include lip reading, signed speech, finger spelling and writing. Interpretation services can also be used with these methods. ●

Deaf-blindness

● The estimated number of deaf-blind people in Finland is around 600. People with deaf-blindness may have some residual hearing or vision, but some rely entirely on their sense of touch and smell. Their method of communication depends on how much hearing or vision they have left as well as on when they have lost their hearing or vision.

Some people with deaf-blindness use the Finnish Sign Language in a tactile form, while others use Finnish or Swedish by means of various communication methods based on hearing, vision or the sense of touch. The deaf-blind also use interpreter services. ●

Speech impairment

● A person with a severe speech impediment refers to a hearing person who is unable to cope in everyday situations by means of speech. It is difficult for this person to produce and/or understand speech. A speech impairment is often accompanied by reading and writing difficulties. Many neurological diseases and disorders impact linguistic functions, i.e. speech, speech understanding, reading and writing. The number of people with severe speech impairments in Finland is estimated to be in the range of 0.3 to 0.5 per cent of the adult population.

A speech impairment and communication difficulties are often due to an underlying neurological or some other disease or disorder. It may be congenital or acquired in adulthood. A severe speech impairment may be associated with conditions such as cerebral palsy, intellectual disability, autism, special linguistic difficulties (e.g. dysphasia), aphasia or dysarthria caused by a stroke or brain damage, various neurological disorders such as multiple sclerosis or with functional limitations or damage to the speech organs. Speech impairment makes it difficult for people to participate in social situations and to exercise self-determination.

According to the estimate of the *Finnish Stroke and Dysphasia Federation*, there are around 20,000 aphasic adults and approximately 30,000 children and adolescents with special linguistic difficulties in Finland. Special linguistic difficulties are manifested as a difficulty to produce or understand speech. The linguistic development of linguistically challenged children is delayed and deviant. These children are slow to adopt vocabulary, sentences, concepts and grammar.

To support their communication, people with speech impairments need speech support and alternative means of communication. These may include methods such as support signing, images, drawing, word lists or the BLISS programming language. People with speech impairments may use a communication aid such as a communication board, a speech synthesiser or IT-based solutions.

People with speech impairments may need speech support and compensating methods to support speech production and/or understanding. The need for these methods is individual, and a suitable method of communication for everyone should be provided in various situations. Speech impaired people generally need support from their environment to use the speech support method. ●

Appendix 2:
Additional information

Programmes, strategies and agreements

- EU Digital Agenda
  http://ec.europa.eu/information_society/newsroom/cf/itemlongdetail.cfm?item_id=5826
- EU e-inclusion policy
  http://ec.europa.eu/information_society/activities/einclusion/index_en.htm
- National information society strategy
  http://www.arjentietoyhteiskunta.fi/inenglish
- Pages on accessibility in communications services at the Ministry of Transport and Communications website
  http://www.lvm.fi/web/fi/viestintapalvelujen_esteettomyys (in Finnish)
- eServices and eDemocracy Acceleration Programme (SADe)
  http://www.vm.fi/vm/fi/05_hankkeet/023_sade/index.jsp (in Finnish)
- Language policy programme 2010–2015 aimed at improving the status of sign language in Finland
  www.kl-deaf.fi/Kipo (in Finnish)
- Disability Policy Programme
  http://www.vane.to/index.php?option=com_content&view=article&id=129&Itemid=13
- UN Convention on the Rights of Persons with Disabilities
  http://www.un.org/disabilities/convention/conventionfull.shtml

Key organisations

- ICT Association for Seniors (ENTER)
  www.entersenior.yhdistysavain.fi (in Finnish)
- Finnish Association of People with Physical Disabilities
  www.invalidiliitto.fi/portal/en/
- Finnish Association on Intellectual and Developmental Disabilities
  http://kehitysvammaliitto.fi/en/
- Finnish Federation of Hard of Hearing
  www.kuuloliitto.fi/fin/in_english/
- Finnish Association of the Deaf
  www.kl-deaf.fi/en-GB/
- Finnish Federation of the Visually Impaired
  www.nkl.fi/7
- Svenska hörselförbundet rf
  www.horsel.fi (in Swedish)
- Union for Senior Services
  www.valli.fi/inenglish.htm
- Central Union for the Welfare of the Aged
  www.vanhustyonkeskusliitto.fi/fin/in_english/

Other essential links

- Web Content Accessibility Guidelines
  http://www.w3.org/TR/WCAG20/
- Public Procurement Advisory Unit
  http://hankinnat.fi/k_peruslistasivu.asp?path=1;161;122591;122593;122596
- E-services and forms intended for public administration
  http://www.suomi.fi/suomifi/workspace/index.html
- Quality to the web – quality criteria and assessment tool for the online services of public administration
  http://www.suomi.fi/suomifi/workspace/quality_to_the_web/index.html
- JHS 129 Guidelines for designing web services in the public administration
  http://www.jhs-suositukset.fi/web/guest/jhs/recommendations/129 (in Finnish)
- Etätulkki.fi – website on remote interpreting
  http://etatulkki.fi/web/index.php?page=what-is-remote-interpreting
- Design for All Network
  http://dfasuomi.stakes.fi/EN/index.htm
- Age Institute
  www.ikainstituutti.fi/index.php?lk_id=7
- Computer rental by the Finnish Federation of the Visually Impaired
  http://www.nkl.fi/fi/etusivu/tiedons/palvelutnakovammaisille/tietokonelainaus (in Finnish)
- Plain Language Centre
  http://papunet.net/selkokeskus/in-english.html
- Finnish Standards Association SFS
  www.sfs.fi/en/
- Internet Text Phone Relay Service
  http://www.protone.fi/palvelut/tekstipuhelu/
- World Wide Web Consortium (W3C) office in Finland
  http://www.w3c.tut.fi/ (in Finnish)

Notes

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